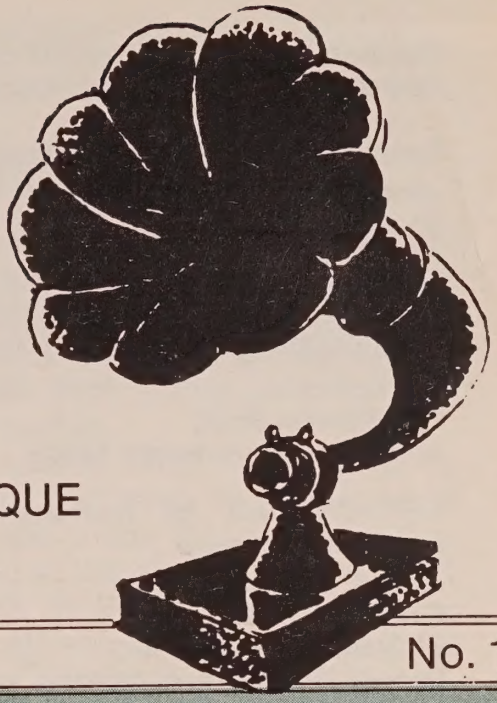
The Antique Radio Gazette



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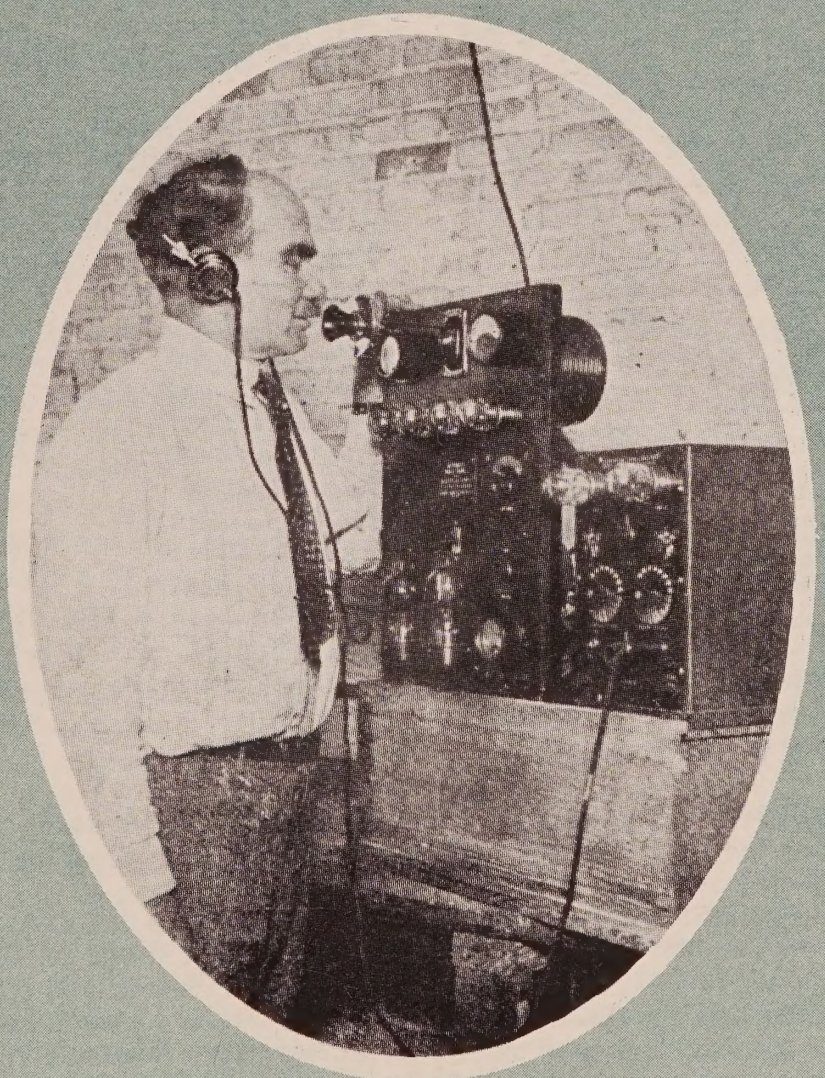

DR. LEE DE FOREST

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Send ARTICLES to be published to:

John E. Drake
23 East Wharf Road
P.O. Box 942
Madison, Connecticut 06443

Send COPY for ADS to:

Mel Comer
205 Roberts Road
Ardmore, Pennsylvania 19003

APPLICATIONS for membership and payment of Dues to:

Jane & William Denk
Secretary/Treasurer
81 Steeplechase Road
Devon, Pennsylvania 19333

All matters re: THE OLD EQUIPMENT CONTEST to:

James Troe
111 Skyline Drive
Morristown, New Jersey 07960

Editor for ANTIQUE TELEVISION receivers:

Jack Davis
63 Midchester Road
White Plains, New York 10606

Contributing Editor

John Milton Williams
53 Evergreen Avenue
Westport, Connecticut 06443

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March 31 June 30
September 30 December 30

The closing dates for receiving material of all kinds, in order to have it appear in the current issue would be:

February 15 May 15
August 15 November 15

Officers of ARCA:

President, John E. Drake
23 East Wharf Road
P.O. Box 942
Madison, Connecticut 06443

Vice President

James Troe
111 Skyline Drive
Morristown, New Jersey 07960

Secretary/Treasurer

Jane and Bill Denk
81 Steeplechase Road
Devon, Pennsylvania 19333

Official Photographer

Dr. Larry Wright
131 Hilltop Drive
Lake In The Hills,
Illinois 60102

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Yearly dues of $10.00 U.S. currency are payable to ARCA January 1, of each year for members in the USA, Canada, and Mexico. Overseas dues are $12, which includes airmail postage.

The Antique Radio Club of America was incorporated in the State of Kentucky, in September, 1972. The first meeting was held at the Marriott Motor Inn, Washington, D.C., on September 23, 1972. At this meeting, by-laws were read and approved and directors selected. We feel that the inception of this Club is a giant step in bringing together those individuals whose chief interest lies in the area of early radio. We invite all collectors and historians of the subject to join the Club. A note to William E. Denk, Secretary, 81 Steeplechase Road, Devon, Pennsylvania 19333, will bring you an application blank by return mail.

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The Armstrong-DeForest Patent Controversy

by
The ARCA Editors

After years of bitter fighting, Dr. Lee DeForest, inventor of the Audion tube, which made possible radio broadcasting and receiving, wireless telephony and the talking motion pictures known as the Phonofilm, won a notable victory in the United States District Court.

By an order of the court, *priority of invention was awarded to Dr. Lee DeForest, on the feed back circuit and oscillating audion,* thereby establishing for all time the claim of Dr. DeForest as their inventor. The two patents issued to DeForest covered completely the subject matter of the patent issued in 1915 to Major Edwin H. Armstrong.

The issuance of the patents to the DeForest corporation was the first direct result of the decision rendered by the district court in Washington on May 5, 1924, which declared Dr. Lee DeForest was the real inventor of the feed back circuit and oscillating audion, and not Armstrong. This decision was the culmination of years of litigation in which DeForest, Armstrong, Dr. Irving Langmuir and Dr. A. Meissner claimed credit for the invention. Despite the claims of the others, a patent was issued to Armstrong in 1915. This patent was later disposed of to the Westinghouse Electric Co., which manufactured the radios under its protection.

Despite this fact, DeForest continued his fight. The first victory came to him in May, when the District Court in Washington handed down a decision declaring that DeForest and not Armstrong or the other claimants, was the inventor. Reviewing the case in detail, the Court held that DeForest's invention dated from August, 1912, antedating the claims of the others by almost a year. Following this decision, the Court ordered that patents issued to the DeForest corporation, which controlled DeForest's invention on the feed back circuit and the oscillating audion.

No sooner were the patents issued to DeForest than announcement was made that suit would be entered in the district court through Darby & Darby, 220 Broadway, New York, attorneys for Dr. DeForest, against the Westinghouse Electric Co. for annulment of the Armstrong patents, and to restrain the company from manufacturing the apparatus in future.

Many millions of dollars were involved by the issuance of these patents to DeForest. It meant that in the future the feed back circuit and the oscillating audion, manufactured under the Armstrong patent by the Westinghouse company, could be made by that concern no longer, but would be manufactured by the DeForest Radio Telephone & Telegraph Co. and its licensees, the American Telephone & Telegraph Co.

Some idea of the magnitude of this outcome may be gathered when it is taken into consideration that the apparatus covered by the patents issued to DeForest were indispensable to all radio sets, and all wireless broadcasting transmitter sets. It also covered all Super-Heterodyne and Neutrodyne sets.

In a statement issued by Dr. DeForest, who won such a signal victory, he said:

"Purely aside from any financial return that may accrue from the issuance of these patents to me, I am most highly gratified for sentimental reasons. For almost a dozen years I have claimed to be the inventor of the feed back circuit and the

oscillating audion. It was a bitter blow, indeed, to me to see patents for them granted to another claimant. But never once did I doubt that justice would eventually be given me. That day is now here. My claims have been proven by the last courts, and I am now in possession of the patents which were withheld from me for so long. It is a splendid victory, and I am very happy at the outcome."

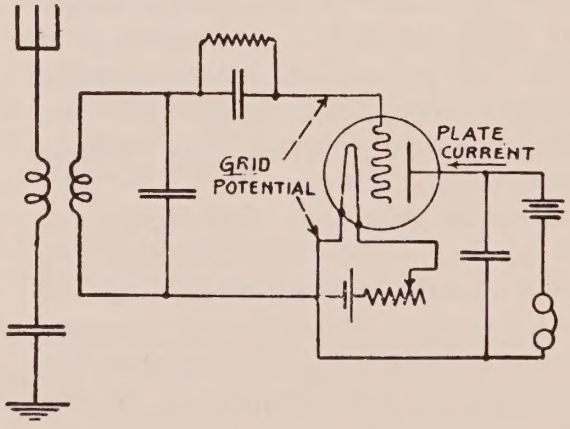
The work of Armstrong at Columbia and at his home culminated in the invention of the now well-known regenerative or feed-back circuit, on which he was granted patent No. 1,113,149, which had been held to be valid and infringed and to cover the regeneration circuit whether used as an amplifier or as a generator of oscillations and amplifier, either in receiving or transmitting. Armstrong had received for this patent and his patent covering super-regeneration, sums amounting to a million dollars.

The Armstrong Patent came before the court in the Southern District of New York in the case of Armstrong and Westinghouse Company vs. The DeForest Company. What the Armstrong invention was and what it was not was ably presented to the court by Prof. L. A. Hazeltine of Stevens Institute by means of two charts (Figs. 1 & 2). In chart 4 (Fig. 1) is shown a wiring diagram which was old or was in use before Armstrong's invention. In fact, it was the circuit of the DeForest grid patent. (Fig. 2) is an Armstrong circuit. It will be noticed, comparing the two circuits, that each comprises an input circuit including the grid and filament and an output circuit including the plate and filament. What is the essential difference in the two circuits? The difference is so slight that it may be foolish to point it out: the relocation of the telephones in the common portion of the input and output circuits. But it was this slight change in the arrangement that made all the difference in the world. For, as the court found, we have here the feed-back circuit and regeneration.

While it was clearly proved what the regenerative circuit is and how it operated, yet at the trial the question arose as to whether or not Armstrong was the first inventor of the circuit.

And another question arose as to whether or not the patent in suit covered a regenerative circuit in an oscillating condition. The defendants attempted to show that DeForest was the inventor of the regenerative circuit prior to Armstrong, and especially of a regenerative oscillating circuit. Many sketches were introduced into evidence and much testimony was taken to prove this point, but to no avail, especially since it was shown that De Forst filed some twenty applications between 1912 and 1915, none of which showed or disclosed regeneration, and it was not until 1915 that DeForest filed such an application, which was after Armstrong's filing date, Oct. 29, 1913, and after Armstrong's publication in the *Electrical World,* December 12, 1914. This publication is now accepted as the last word on the subject and should be read by those sufficiently interested.

To be continued



Simple Audion Circuit

Fig. 1. Circuit of De Forest grid patent, in use before Armstrong's invention.

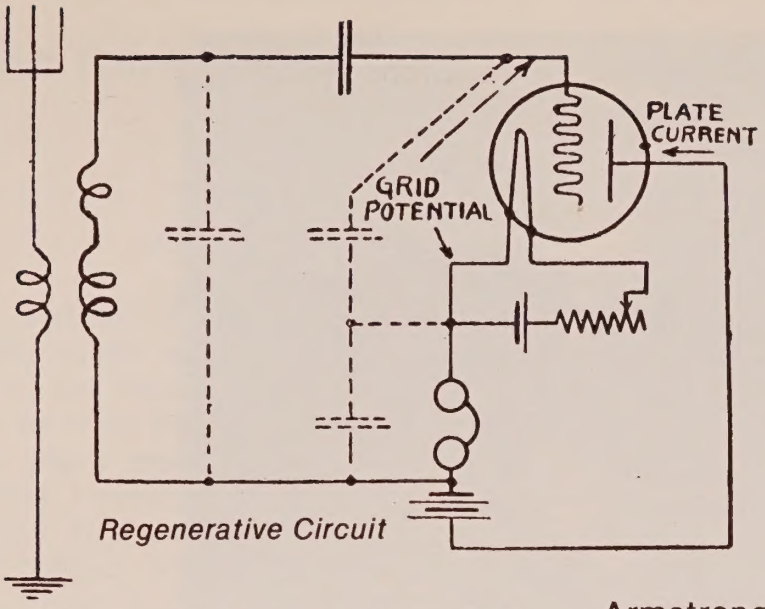


Fig. 2. Here, with the relocation of the telephones in the common portion of the input and output circuits, we have the "feed-back" circuit and regeneration. Compare with Fig. 1.

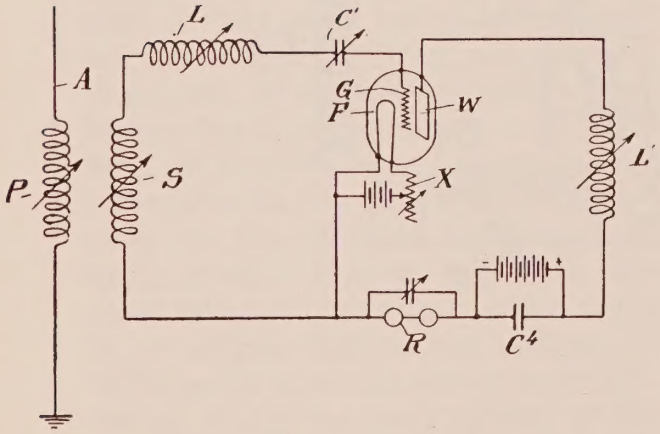
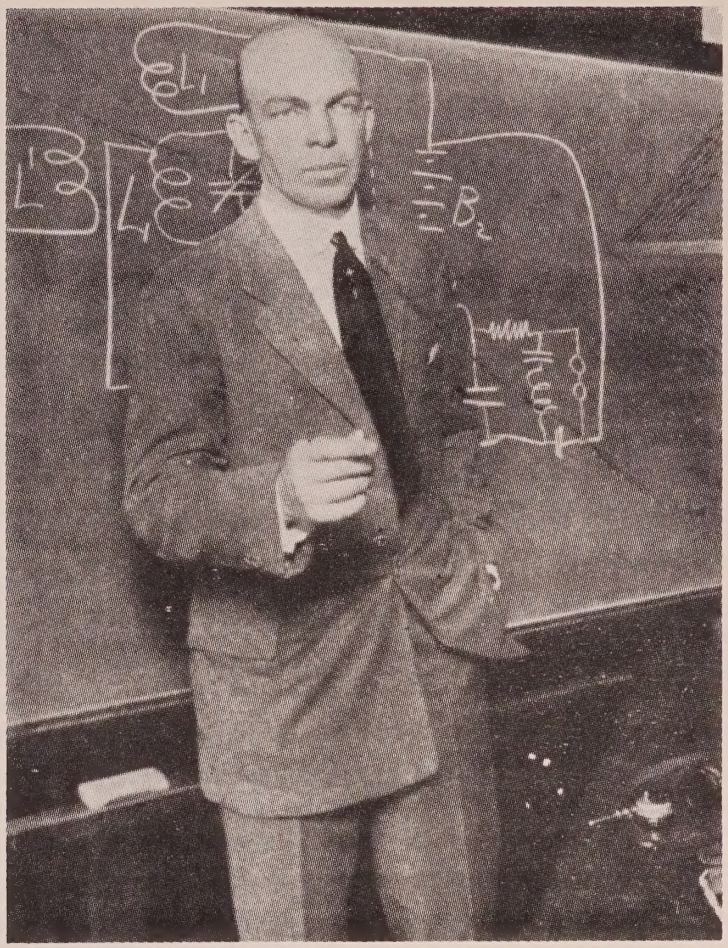


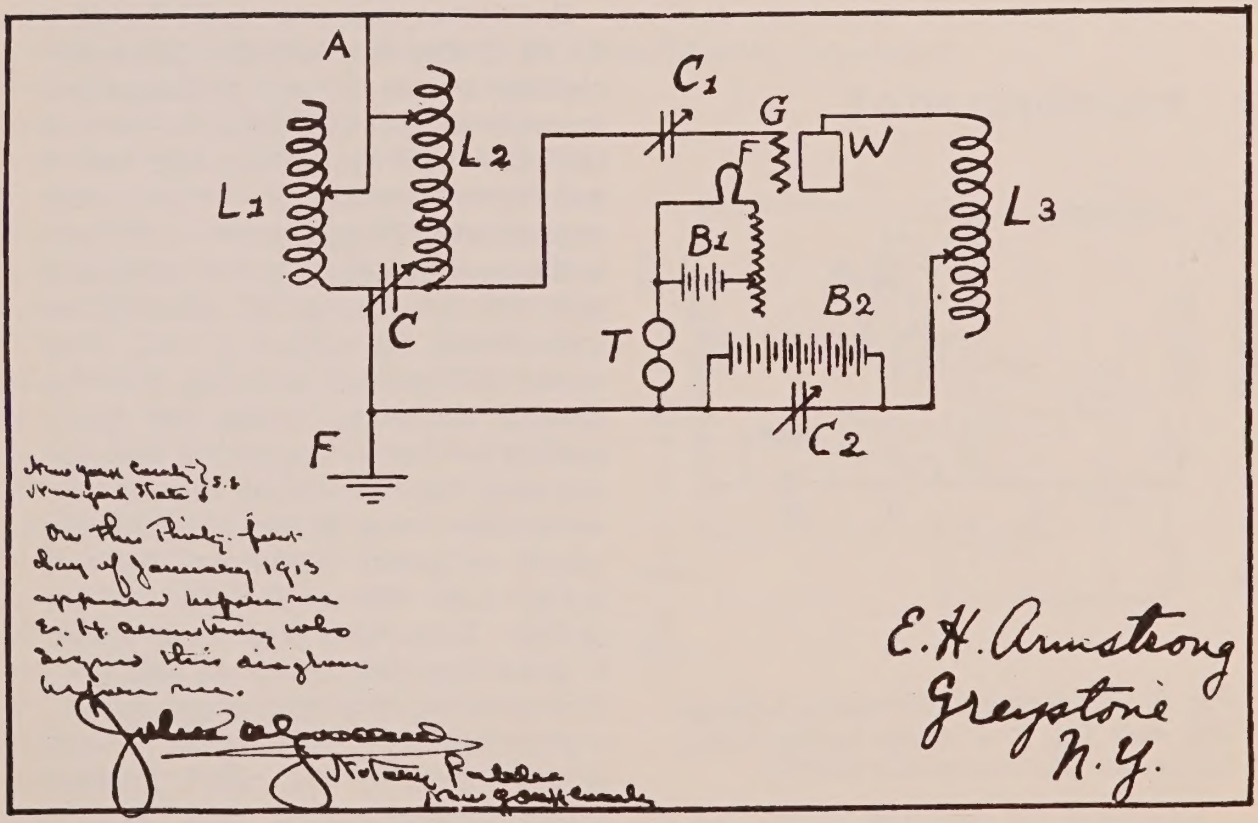
Fig. 3. The essential difference between this and Fig. 2 is in the tuning inductance coil, L'.

Armstrong testified that he had constructed and used apparatus embodying the invention in the fall of 1912, which apparatus was before the court at the trial. During the winter of 1912-13, he demonstrated the invention to several, but did not disclose the construction and arrangements of circuits. But these witnesses observed that the apparatus when adjusted gradually produced increased signal until a point was reached when the apparatus started to "hiss," a characteristic of the regenerative circuit.

It was not, however, until January 31, 1913, that Armstrong made a disclosure of the circuit arrangement to anyone. On that date he took a sketch of the apparatus and had it witnessed before a notary. His squadmate, Burgi, went with him and saw the sketch, but in testifying was not decided as to whether he understood the circuit or not. This sketch is identical with Fig. 2 of the patent. However, it was not plain sailing for Armstrong at the trial, for not only had the notary died meanwhile but it was shown that the notary's recorded signature did not agree with the signature on the sketch. Testimony had to be taken to show that the signature was genuine and that the notary sometimes signed his name differently. In view of all the facts, the court decided that January 31, 1913, was the date of Armstrong's invention.



Edwin H. Armstrong



An Introduction To The Early Radio Industry Of Northern New Jersey

by
Jim Troe

I recently met an old friend at a Radio Club meeting that I hadn't seen for many years. In fact, he retired from Bell Laboratories about ten years ago. During our conversation I mentioned that my major hobby now was the collection and restoration of old radios, and the searching out of radio history. He invited me to his house to look at a National NC101X that he said I could have for my collection. Several evenings later I dropped over to his house where we started talking about his early days in radio. Much to my surprise, it turned out that before I first knew him at Bell Labs, he worked for Aircraft Radio Corporation and for Measurements Corporation. This conversation led to the fact that during the time Harry W. Houck was part owner and President of Measurements Corporation, my friend Ed Weed was Mr. Houck's right-hand man, Office Manager, and general jack of all trades for him. During this time, Ed got to know Major Armstrong very well and, in fact, was being considered as the Major's official biographer. However, Major Armstrong's untimely death put an end to such matters. Ed is an ex-newspaperman and likes to write. He may write us an article for the Gazette someday. I'll keep trying! During our visit, Ed went into his files and found a copy of an article that he had written in 1950, while at Measurements Corporation, about the early history of radio companies in the Northern New Jersey area. It was published in "The Citizen of Morris County" on June 30, 1950. He authorized me to rewrite the material as I saw fit. However, it seems to me to be worth printing in its entirety. Due to its length, it will be started in this issue, and continued in later issues of the Gazette.

Note that the article was written in 1950. In a later issue, we will address the more recent history of the companies discussed in the article.

Six Major Firms Dominate Precision Radio Instruments In Boonton, N.J. Area

by
Edgar M. Weed

Boonton Radio Corp.

By 1934 the Seabury interests had liquidated a good portion of their holdings and in that year William D. Loughlin, one of the industry's pioneers, purchased the original RFL building located along the Lackawanna Railroad tracks at Boonton and established the Boonton Radio Corporation.

This new concern concentrated its engineering skill toward the creation of new measuring equipment then so badly needed by the radio industry. For example, manufacturers were confronted with the costly annoyance of making coils that would pass all requirements when tested in their own laboratories only to be rejected by the purchaser because he had entirely different test instruments. Approved standards were necessary and the Boonton Radio Corporation engineers were determined to build them.

In November 1934, Mr. Loughlin presented at the Institute of Radio Engineers' Fall meeting in Roches-

ter, N.Y., the company's first "Q-Meter." This instrument was immediately accepted as a standard by industry and research laboratories. The "Q-Meter" in an approved form is still being produced by BRC in large quantities and is the best known instrument of its type in use today.

Other new equipment followed including the "QX-Checker," similar to the "Q-Meter" but designed as a production testing instrument that could be operated by factory personnel, and still give laboratory accuracy. A radio interference measuring instrument was developed and produced for the Government and BRC pioneered the development of the beat-frequency signal generator.

Major Edwin H. Armstrong had introduced his system of frequency modulated transmitters and receivers which attracted the attention of engineers throughout the world. One of these was Mr. Loughlin who, predicting the demand for FM test equipment, directed his laboratory group in the design and production of an FM signal generator that was first presented in 1940 at the Institute of Radio Engineers' meeting in Boston. The concern had again made a timely development as a modified version of this instrument is still being manufactured by BRC.

In 1940 with the war clouds darkening, but our country still not in actual combat with Germany or Japan, large numbers of planes were being flown to Canada for the installation of armament and radio equipment before they were piloted to the British Isles. To provide the ferry pilots, who took the planes to Canada, with radio, so vital to safe navigation, Boonton Radio Corporation produced a compact, lightweight receiver and power supply. This unit, developed by RFL, required no special installation and had only to be carried by the pilot for use in each plane he had to deliver. The receiver was later used by the Navy in its N3N-3 training planes.

Like the others, Boonton Radio Corporation's efforts during the war period were devoted to the production of instruments for the Armed Services and other manufacturers making electronic equipment. The production of micro-wave signal generators for the development and maintenance of airborne radar equipment represented the company's principal output for war-time use.

In cooperation with the extensive program of the CAA and Department of Commerce to equip our airways with the most modern electronic navigational equipment, the Boonton Radio Corporation in 1947 introduced a crystal monitored signal generator and a glide slope test set which are both widely used for testing omni-range radio equipment and other airborne navigational instruments. Various airlines are now installing this new equipment and it will eventually be available to private flyers; thus this Boonton laboratory has made an important contribution to the safety of air travel.

Within the past two years a large addition has been built on the BRC plant and the original structure has been modernized in every detail.

Boonton Radio Corporation's products are recognized throughout the world for their superior quality which is the cumulative result of expert care from the drafting boards to the final test departments and the company's policy of building only those instruments which have been pioneered in their own laboratories.

Officers of the BRC besides president William D. Loughlin include Dr. George A. Downsbrough, vice president and general manager who joined the organization in 1942, and James R. Estler, secretary-treasurer.

Series will continue in the next issue with the Ballantine Laboratory story.

Postal Service Lists Subjects Of '83 Commemorative Stamps

American inventors — A block of four honoring Nikola Tesla, inventor of a system of alternating current transmission, transformers, and wireless systems of communication; Edwin H. Armstrong, who developed the frequency-modulation system of radio; Philo T. Farnsworth, who conducted experiments in television; and Charles Steinmetz, who worked on the theory of alternating-current phenomena; date and place to be announced.

Book Review

The Story of 1BCG

An original issue of the October 1950 "Proceedings of the Radio Club of America" is available from the R.C.A. This issue contains a 65 page complete story of the first short-wave trans-Atlantic message as it transpired in 1921. Included are many rare photos, detailed descriptions of the station equipment, the antenna, the complete story of the operation, and a reproduction of the actual station log. This station, 1BCG, was designed, built, and operated by seven Radio Club of America members.

The issue is free to anyone who donoates $25 or more to their "Grants-in-Aid" fund. Send donations to G. J. Apfel, Box 73, Park Ridge, New Jersey 07656.

J. L. Troe

Early Radio Wave Detectors
by V. J. Phillips

In this scholarly volume of 223 pages, Mr. Phillips records the history of early electromatic wave detectors, starting with the 1842 experiments of Joseph Henry. The book particularly covers the period from Hertz's experiments of 1886 to the invention of the Fleming valve.

Most of us are educated to believe that rectification is the basis of all radio wave detection. However, most of the detectors described by Phillips are instruments that react in some physical way to the presence or absence of a radio frequency signal. Rectification did not arrive on the scene until the advent of the crystal detector.

The earliest detectors consisted of spark gaps, glow tubes, explosive mixtures of gases, gold leaf electroscopes, etc. The first really practical radio wave detector was the coherer, which was first "invented" in 1835, and rediscovered in the late 1800's. Phillips devotes 46 pages to the history of the many different types of coherers, and includes a bibliography of 198 entries on the subject.

Succeeding chapters cover the history of electrolytic detectors, magnetic detectors (including 101 references), "liquid coherers" (thin film and capillary detectors), and thermal detectors. A chapter is then devoted to the history of "Tickers," mechanical devices used in the early 1900's for continuous wave detection.

In his chapter on "Miscellaneous Detectors," Phillips even includes discussion of the 1913 "Physiological Detector" of Lefeuvre. The sciatic nerve of a frog was connected to the aerial circuit via an electrolytic detector. The leg was connected via string and pulleys to a pointer moving along the smoked surface of a rotating drum. This was

(Please turn to page 14)

Letters

Dear Bill and Jane:

Thanks for the reminder the 1983 dues are payable, and my check is enclosed. I have enjoyed my membership these past eight or nine months and look forward to another year. I will be more careful in the future in writing you as I never dreamed my initial letter would turn up in the Gazette. Hi.

I wrote Wes Chatellier in Baton Rouge after seeing his letter in the Gazette telling you of his project building an old 1928 QST recvr. and my letter has led to one of the best friendships of my life. We began a barrage of correspondence, then phone calls, and then in November, I invited Wes and his wife to come to Dallas and stay with us and attend the ARCA/Vintage Radio Conference. Wes did come on Thursday and stayed till Sunday and we had a ball. We had built almost identical old QST shortwave recvrs and enjoyed comparing notes on them.

I secured my Amateur License in August, and am now N5FEI. (I was W5FEW in the 1930's and almost got the FEW part of my old call again — missed it by only about a dozen letters.) Wes made me a present of a nice little Xmtr, but I have been slow getting my antenna and the rest of the lash-up in place. When you revise the roster of members in the future I would like my call included.

After 40 years of almost no attention to the radio hobby, I am head over heels into it again, and am a member of SOWP, AWA, MORSE TELEGRAPH CLUB and have been corresponding with a number of members of these clubs around the country. I wrote Lou Moreau about the old Hulit Transmitter I have, and about a device called a Vailograph, which was new to her, believe it or not. She now has color slides and pictures of these and has included the slides in her show, I think. We have also corresponded considerably and I have learned a lot from her and she has given me some information on books on telegraphy, some of which I have found in our Public Library.

So, my membership in ARCA has led to many new friends, and lots of pleasant experiences. I wish there were more members in this area.

Best regards,

J. W. (Bill) Suter
1627 Heather Glen
Dallas, TX 75232

11 February 1983

Mr. Harry W. Houck
c/o Gervis & Novy
1300 Route 46
Parisippany, NJ 07054

Dear Harry:

Our Club is again in your debt for another generous gift of $1,000.00. President John Drake and Vice President James Troe join in expressing, on behalf of the Club, our great appreciation.

With this gift, our Club is purchasing a high-interest Savings Certificate. Proceeds from this and previously-acquired certificates will be used in advancing our Club's educational pursuits having to do with the preservation of the history and apparatus of early wireless — a field in which you were so active.

We trust that this will find you in Florida enjoying much pleasanter weather than we are having here right now! We are in the early hours of a real snowstorm — heavy snow, temperature 15°F., winds to increase to 30 to 40 mph this evening, with a total snowfall of at least 12" predicted. But anyway, we wish you all the best from the snowy hills near Valley Forge!

Sincerely,

Jane & Bill Denk
Secretary/Treasurer

c.c. John Drake
James Troe
Mel Comer

February 17, 1983
6518 Gunpowder Lane
Prospect, KY 40059

Mr. John E. Drake
23 E. Wharf Road
P.O. Box 942
Madison, CT 06443

Dear John:

You are probably aware that Gordon passed away last Sunday, February 13th. Members of your organization were kind enough to make periodic contact with the family to keep abreast of his progress in the hospital.

Dad enjoyed the ARCA association so very much that I thought it appropriate to write and thank you all for your concern and interest in Gordon's well being.

Floss is recovering from her heart attack and the void that my Dad's death has left in her life. Without having discussed too many memories of the recent past with her, I would like to keep a family member active in your organization. At this point I'm sure she would decline, but I would like to continue the association, continue to build Dad's radio collection and participate in your club activity.

Please express our thanks to all members.

Sincerely yours,

Robert G. Eklund

Our Newest Members

Thomas A. Doerr, Bay City, MI
Richard M. White, Midland Park, NJ
Al Reymann, Bath, PA
Charles J. Affelder, Adelphi, MD
Dean Christian, Hinckley, OH
Kenneth W. Tally, Timonium, MD
Erich E. Brueschke, Hinsdale, IL
Daniel C. Ferguson,
So. Charleston, WV
Seth J. Ward, Pittsburgh, PA
Cris E. Spradling, Charleston, WV
George Owens, Columbia, MD
Stewart W. Oliver, Venice, CA
Edward J. Trella, Meridan, CT
William L. Simmons,
Slingerlands, NY
Peter C. Breunig, Lawrencville, GA
Bruce Damschroder, Urbandale, IA
Keith W. Ray, S. Milwaukee, WI
Raymond G. Snyder, Flint, MI
Daniel P. Johnson, Ettrick, WI
John A. Bannon, Paris, IL
Steven Noworyta, Jr., Towanda, NY
Walter S. Curry, LaMesa, CA
Robert N. Willis,
Stone Mountain, GA
Arnold G. Schmidt, Jamestown, ND
Gordon McNeill, Jackson, MS
B. W. Whittle, Palmetto, FL
George Potter, Lewisville, TX
Kirk Dunann, Ione, CA
David Schapiro, Griffin, GA
Jon Walker, Bellevue, NE
Clinton A. Blais, O'Fallon, IL
Michael L. Kreuser, Evanston, IL
Borut Mlaker, Minneapolis, MN
Rev. Philip H. Pockras,
New Castle, PA
Henry Wilks, Brinkley, AR
John W. Crowe, Woodland Hills, CA
Charles Griffin, Jacksonville, NC
Mary Greene, RCA Corp., NYC, NY
Ray Garner, Big Sandy, TN
David I. Combs, Wichita Falls, TX
Andrew Toruss, Orange, CT
Franz Mock, Krems, *Austria*
Ernest Sisak, Oshawa, ONtario
Randall Renne, Dixon, IL

Please note: The ARCA Winter Gazette was incorrectly numbered. It should have been Vol. 10, No. 4, 1982.

The Restoration Center

by
Jim Troe

Response to the first issue of this new service to ARCA members was encouraging. Answers were received from many members, covering most of the questions listed last time. Some new questions were received and are included below. Many of the correspondents expressed congratulations on the intent of the column. We will continue it as long as a service is being performed!

Send your questions and answers to me at:

111 Skyline Drive
Morristown, N.J. 07960

As an additional service, we will publish the address of companies or individuals that sell items of use to set restorers.

First for some answers:

A4/82-1*
Exact duplicate solid brass hinges for use on Aeriola Jr, Sr, etc., boxes are STANLEY CD5316. They are available from Constantine, or from many hardware stores. They can be nickel plated to match the originals. Does anyone know where to find them in nickel plate?

A4/82-2
Exact duplicate brown power cord for Atwater Kent sets can be obtained from:

Terry Mulford House, Inc.
Rt. 1, Box 44
Orient, NY 11957

(S.A.S.E. for descriptive information and prices.) It is also available from Old Tyme Radio Co.

*4/82-1; 4th issue, 1981, Q or A No. 1

A4/82-4
Quarter sawn and rift cut White Oak, for GREBE and De Forest cabinet restoration is available from:

TALARICO Hardwoods
RD 3, Box 303
Mohnton, PA 19540
(215) 775-0400

A4/82-5
Spray crackle paint is made in 10 colors (including Atwater Kent "British Brown") by:

Illinois Bronze
Lake Zurich, Illinois

Write them to find a local distributor.

A4/82-6
Here are two ways that were submitted to flatten a warped rubber or bakelite panel:

1.Preheat oven to about 200°F. Turn heat off. Sandwich warped panel between two flat masonite sheets, clamped with C-clamps. Place in oven. Tighten C-clamps as required (every 15 minutes or so). Remove when oven is cold.

2. Place panel in oven at 250°F, until "soft." Remove panel and block to slightly reverse the warp. Allow panel to cool.

A4/82-7
Replacement round domed glass can be obtained from some jewelry or clock repair shops. Joseph C. Smolski can supply convex radio dial glass in many sizes and shapes. Send S.A.S.E. to him for his list and prices at: 2641 East Cannon Drive, Phoenix, Arizona 85028.

Q4/82-9
Two ideas for replacement metal belts for AJ metal box receivers were received:

1. Best source is a rusty junker set. Bands and pulleys are often still usable.

2. Obtain plastic "tie-wraps," 14½ inch long, from an electrical supply house. Punch holes in the proper spots to match the pins in the pulley.

Q4/82-10
The only suggestion on how to loosen frozen pot metal was to use "hammer, chisel, and hope"! There must be a better way? Anyone know any?

Q4/82-12
1. Sheet bakelite can be obtained from:

Plastics of Philadelphia
1212 Hadenfield Road
Cherry Hill, NJ 08002
(minimum size 2x3 feet)

2. ETCO Electronics also sells bakelite.

3. Another idea is to substitute black sheet acrylic (3/16 or ¼ inch thick). This can be obtained from many stores that sell plastics, such as:

AIN Plastics
300 Park Avenue S.
New York, NY 10010
(Catalog $1.00)
or
Mail Order Plastics
58 Lispenard Street
New York, NY 10013

Q4/82-14
Replacement headphone cords and speaker cords are available from Olde Tyme Radio Co.

Q4/82-15
To loosen stuck caps on headphones, heat the cap, but not the case, with a hair dryer. Gentle tapping should free the cap.

Q4/82-18
Several solutions to use in an ultrasonic cleaner were suggested:

1) 1 teaspoon dishwashing detergent (such as Ivory Liquid) and 2 oz. ammonia, in 1 quart of water. This solution is good for general cleaning. It may remove paint from dials, so test first by applying some cleaner on a cotton swab to a small area. Be careful about old knobs made of putty compound. They will disintegrate in water.

2) Items which have become full of grease, wax, and dirt can be placed in a plastic bag with a trichlorethylene solvent (such as Carbona), and then placed in water in the ultrasonic cleaner tank. Be careful with plastics.

Q4/82-19
Old type spaghetti tubing can be obtained from the Olde Tyme Radio Co.

Q4/82-20
Here are several ways to keep dial cord from slipping:

1) Rub with powdered rosin (obtain from music store)

2) Use GC Electronics "NO SLIP" — obtainable from electronics stores, such as ETCO Electronics.

3) Use Anti-Skid rug backing spray

4) Use toothpaste (not gel type). Coat coard lightly. Let dry.

Q4/82-21
Rubber drive belts can be replaced using kits obtainable from:

Oneida Electronic Mfg. Co.
Box 678
Meadville, PA 16335

They have kits to make any length or size of belt in round, square, and flat cross sections. Belts are also available from Olde Tyme Radio Co.

Q4/82-22
Veneer and "How-to-do-it" literature are available from:

Craftsman Wood Service Co.
and
Albert Constantine & Son

Q4/82-23
Yellowed panels can be reshined as follows:

Sand carefully with 240 grit paper. Then sand with 400 grit. Buff with 0000 steel wool. For a satin finish, polish with crumpled newspaper. For a glass finish, spray with clear lacquer.

Thanks to all who took the time to share their answers with us. And now for some new questions:

Q1/83-1
Where can I obtain very find enameled wire (such as no. 42) for rewinding headphones, speaker drivers, etc.?

Q1/83-2
Where can I find a cross reference of military VT numbers to commercial tube numbers?

A1/83-2
ARCA Gazette Vol. 8, No. 4.

Q1/83-3
Is there any way to lift an old decal in a way to reuse it after cabinet refinishing?

Q1/83-4
Where can I get panels engraved?

Q1/83-5
Where can I obtain replacement printed tuning dials for a given radio?

Q1/83-6
Where can I obtain OZ Polish?

A1/83-6
Constantines

Q1/83-7
Where can I find LITZ wire for winding coils?

Q1/83-8
Where can I find a schematic for a TUSKA 225? What AFT is used?

A1/83-4
Precision Graphics in
10 Clark Street
E. Berlin, CT 06423

Q1/83-9
For a Burns Tulip Type Speaker, or any similar speaker:

1) How can I repair a "missing piece"?

2) How can I best reglue broken out pieces?

3) How can I unglue the horn, so I can use the good pieces from two broken horns to fabricate one good horn?

Q1/83-10
Is there a good flux to use in soldering tinsel wire, such as used in headphone cords?

A1/83-10
Obtain a clear shellac stick as used for furniture repair. Hammer to powder. Mix with alcohol. Rub mixture into tinsel cord before soldering.

Q1/83-11
Where can I find a cross reference listing of military AN numbers and the commercial or amateur equivalent?

Q1/83-12
Does anyone replace filaments in old tubes (audions, WD-11, etc.)?

Here are some useful places to write to for catalogs that include items of interest to set restorers:

Old Tyme Radio Co.
2445 Lyttonsville Road
Silver Springs, MD 20910
(S.A.S.E. for flyer)

Albert Constantine and Son
2050 Eastchester Road
Bronx, NY 10461
(catalog $1.00)

ETCO Electronics
North Country Shopping Center
Plattsburgh, NY 12901

Craftsman Wood Service Co.
1735 West Cortland Ct.
Addison, IL 60101
(catalog $1.00)

ARS Electronics
646 Kenilworth Terrace
Kenilworth, Illinois 60043
(2 first class stamps
for a catalog)

Brookstone
127 Vose Farm Road
Peterborough, NH 03458

Precision Graphics
10 Clark Drive
E. Berlin, CT 06023

B-Scan Corp.
2427 N. Forth Street
Philadelphia, PA 19133
Early TV tubes

MEL'S CORNER

Lots of activity been going on over these past winter months with the collectors working over their goodies that they have acquired this season past.

Several large collections in the southwest came on the market and were gobbled up in a hurry with buyers coming in from everywhere. The question we are asked frequently — "How are these antique values holding up in view of present-day conditions of high interest rates and inflation?" Well — there is only one answer to this — rarely do we see these days any super-bargains in light of what the values were just three or four years ago.

The ever-growing number of collectors getting into this hobby of ours, seeking to add to their collections, has created a scarcity of the better quality items. However — we now have greater numbers of collectors out looking and uncovering items from many sources that have been stashed away for years!

There were a few surprises at the AWA auction last fall at Canandaguia when one old timer decided he wanted a rare key at $750.00, also a De Forest Inter-panel receiver that topped the list at $900.00. Of course, there are the exceptions — bearing in mind condition, quality (rare) and being most desirable to those who actually used this type of gear years ago.

The ads we see coming into the Gazette contain few offers of the very early wireless gear. Every now and then a few items show up from some old timer in QST. It is even rare to see items offered at the Hamfests. Where has all this early gear gone that a decade or so was most prevalent?

An item overlooked by most collectors is the early handmade assembled set of early twenties. Sure — some of these were crude, but some are most outstanding, done by craftsmen of limited financial means in those early days.

A few of these items turn up now and then to confuse the collector. It looks commercial. But — no label — no identification. Some are a mere assembly of components wired in various fashions as circuitry improvements evolved. Baseboards of these sets show socket relocations of tubes — lots of screw holes! Experiments!

When regeneration came along, the big event was metal shielding! It started with the early military sets — the IP's — Wireless Specialty and others — heavy copper lined cabinets. Grebe settled for a small aluminum plate (behind the oscillation variometer) on some series.

The amateur in construction saved all the tin foil from packs of cigarettes — as then produced — and glued the pieces to his panels. Later, Campbell soup cans served as tube shields.

About 1921-1922 is known as the period of "Howling" tubes! Westinghouse RA-DA & RC settled for some rubber strips under the tube sockets, requiring metal suspension hardware. Nasald, prominent socket manufacturer, plastered sponge rubber on the bottom of UV-199 sockets. Then the smart boys in Newark, N.J., solved the problem with a molded hunk of lead which sat upon the top of the tube — held there by a hole in the middle fitted to the tube tip seal off. A number of versions of these appeared — some covering the whole tube with clamps. (See next page)

When the day of the metal panel and chassis arrived, it was a sad sight to see those beautiful finish wood cabinets with their bakelite panels disappear! Shielding was then "in," along with the improved circuitry and design. The lone survivor was the console floor models such as Atwater Kent, parking the metal box — with openings through a wood panel for operations.

The brass and nickel fittings of the old days evolved cadmium and present-day plastics! No wonder we look at some of these older quality sets with a sense of admiration and respect!

The big antique radio sets of 1983 are now approaching. The outlook is for greater attendance than ever. The programs have been expanded as well as contests and flea markets and the chance for a fun time — with HAPPY HUNTING!!!

CHEERIO!!

HISTORICAL ITEM

ARCA was incorporated in the Commonwealth of Kentucky as a non-stock, non-profit corporation, on August 31, 1972. By mid-1975, ARCA's membership had grown from its early Charter Membership of 75 to a total of 161. Since then, our Club has enjoyed a steady membership growth, with membership totals, taken at mid-year, as follows:

1976	193
1977	262
1978	298
1979	376
1980	424
1981	475
1982	513

The equivalent mid-year point has not yet been reached in 1983, but as of February 22, 1983, ARCA's membership totals 625. By mid-year, this number will be positively affected by the addition of new members and negatively affected by dues-delinquent members and drop-outs. Thus far in 1983, we have added 51 new members. See lists of newest members, GAZETTE, Vol. 10, No. 4 (misprinted "Vol. 11, No. 4") and this issue. Our newest member is from Austria!

(continued from page 7)

actually a very sensitive detector, and was used to receive time signals over a distance of about 300 miles!

In the final chapter there is a discussion of the history of "crystal detectors" starting with the work of Braun in the 1870's, and including molybdenite, galena, carborundum, Perikon, Pyron, and the Bronc cell detectors. An interesting comparison of the sensitivities of various detectors as reported in 1911 and 1915 is included. A silicon detector was then reported to be the most sensitive.

Phillips work was sponsored by the Science Museum, London, in 1977, and the book is published in London. It should certainly be in the library of any serious student of early wireless.

And now for the bad news! This book is available in the U.S. for $60.00 from:

IEE/PPL Service Center
INSPEC Dept.
445 Hoes Lane
Piscataway, NJ 08854

I recently obtained my copy in the London Science Museum book shop for about half that price! If there is interest, I might be able to pick up copies at the lower price, on one of my future trips to London.

Jim Troe

The First Station

by
Howie Immekus
Director of Technical and
Broadcast Operations
KCBS
San Francisco, CA

For many years now, I have heard remarks at technical gatherings and have seen articles in technical publications about radio station KDKA, Pittsburgh, being the first station. In the past I have ignored the statements, but I must be getting crotchety in my old age because I want to see justice done.

In an article by Mike Palmer on audio switching systems in your March 1982 issue it is stated, "The first station, KDKA of Pittsburgh, began broadcasting in late 1920." The statement is wrong because KDKA is not the first station. It was the first station to receive a license from the FCC, but it was not the first station on the air.

Radio Station KCBS is the descendant of the first station to transmit material to all who could receive the signal. The history of Dr. Herrold's station follows.

KCBS Newsradio 74, the 50kW CBS-owned station in San Francisco, is the direct descendant of a small 15W spark transmitter developed by Charles David Herrold, principal of the Herrold College of Engineering and Wireless, which broadcast successfully for the first time in January 1909.

Broadcast, by definition, means "to cast in all directions," and that, in contrast to point-to-point wireless communication, is what Professor Herrold pioneered in 1909 to give KCBS its historical claim of being the world's first broadcasting station.

It became a "commercial" outlet on January 15, 1926, when the Sperry Flour Company bought a 15-minute cooking program five days a week, although small local merchants had used the station before this date.

The station's first broadcasts occurred more than three years before Congress enacted the Radio Act of 1912, which required licenses and call letters from "voice transmitter." Until this time, Herrold's operators simply announced, "This is San Jose calling," gave a vocational school identification, and went into their news and music. Operating the station continuously was a logical way for him to obtain publicity for his wireless school among an audience most likely to enroll — the teenage amateurs. Early equipment used included water-cooled microphones.

In 1921, after licenses were finally issued under the classification of broadcasting, Herrold's station became KQW. The call letters were changed to KCBS in 1949.

Herrold's 15W transmitter was boosted to 500W of power in 1925 and sold to the First Baptist Church in San Jose, CA. Fred J. Hart operated the station and a year later purchased it. Power was increased to 1kW in 1934 when Hart sold the station to Ralph Brunton and C. L. McCarthy. In a year, power was once more stepped up — this time to 5kW.

CBS took over in 1949 with Arthur Hull Hayes, who was then the first general manager and later became the president of CBS Radio. Power was boosted to its present 50kW in 1951.

The KCBS files are filled with documents which authenticate the pioneering accomplishments of Herrold. They include a transcript of a talk by another "father of radio," the late inventor Dr. Lee DeForrest. He was on the scene, and addressing a banquet of the Veteran Wireless

(Please turn to page 21)

The Antique Radio Club of America
Eleventh Annual Meet
Charleston, West Virginia
May 11, 12, 13 & 14, 1983

Monday, May 9	Early Bird Arrivals (Special Convention Rates Apply)
Wednesday, May 11	
1:00 p.m. - 9:00 p.m.	Early registration Preview "Pioneer Museum"
Thursday, May 12	
8:00 a.m.	Outdoor Flea Market in the inter-parking area. All participants must be registered and areas will be assigned by Geoffrey Bourne and Rod Glancy.
10:00 a.m. 3:30 p.m.	Tours of Kanawha Glass and Blenko Glass plants
6:00 p.m. - 7:00 p.m.	Renew old friendships at the Iron Gate Lounge.
7:00 p.m. - 9:00 p.m.	Dinner on your own. Iron Gate Restaurant or Shoney's. Information on many fine restaurants available.
9:00 p.m. - 2:00 a.m.	Entertainment in the Iron Gate Lounge.
FRIDAY the 13th	*"Bring Your Rabbit's Foot — Four Leaf Clover Day"*
8:00 a.m.	The Flea Market continues.
8:30 a.m. - 11:30 a.m.	Register Auction items. Bid cards available.
9:30 a.m. - 3:30 p.m.	Tour of the GRANDEST *State Capitol* in the country!! Plus, tour of our *Archives & History Cultural Center;* the *Governor's Mansion; Sunrise Art Gallery & Museum;* with lunch at the *Firehouse #4.* All within 10 minutes of The Ramada Inn.
9:30 a.m. - 12:00 a.m.	Check entries for "Old Radio" contest at the Columbia Room. Our assistants will be Harold Rulen and Clyde Trivette.
10:00 a.m. - 12:00 a.m.	Viewing and check-in of auction material. Please, no junk. Auction assisted by J. A. Moore and Tommy Humphries.
1:00 p.m. - 1:30 p.m.	Viewing of Auction items. Bid cards available.
1:30 p.m. - 4:30 p.m.	Auction Sale
2:00 p.m. - 5:00 p.m.	Preview of entries in "Old Radio" contest.
4:30 p.m.	Buyer Payment & Pick-up.
7:00 p.m. - 9:00 p.m.	Special Buffet Dinner. Presentation of Awards.
8:30 p.m.	Payments to Sellers.
9:00 p.m. - 10:00 p.m.	A Special Presentation.
10:00 p.m. - 2:00 a.m.	Entertainment at the Iron Gate Lounge.

Saturday, May 14

9:00 a.m. - 11:00 a.m.	The Three R's — "Rulen's Rule On Restoration." Aimed at the new collectors who have little knowledge of restoration. Comments of "Old Timers" welcome.
10:00 a.m. - 2:00 p.m.	Tours of the *Pioner Museum* and walking/ shopping tour of downtown Charleston. At least two departure and arrival buses for both tours.
2:30 p.m. - 3:30 p.m.	Mel Comer's Show & Tell.
4:00 p.m. - 5:00 p.m.	ARCA Meeting — All Welcome!
7:00 p.m.	Banquet — A special program. *Hugh McPherson* brings back the early days of radio broadcasting in West Virginia. The *Herb Morrison* presentation (tentative pending working out conflicting schedules)

Special times will be posted for Thursday-Friday-Saturday tours of the "Pioneer Museum." A tribute to the early days of the telephone, plus a small ARCA display presented by our museum.

1983 Old Equipment Contest

Charleston, West Virginia

The contest for 1983 has been designed for competition in the regular categories and in some special classes suggested by our members.

The standard categories:

1. Crystal receivers.

2. Regenerative receivers.

3. Tuned radio frequency amplifier receivers. "Three-dial" (tuned circuit) receivers not included.

4. "Three-dial" tuned radio frequency receivers.

5. Superheterodyne receivers.

6. Transmitters.

The special categories:

7. Classic Receivers, socket power. Bring your favorite classic receiver chassis. Examples are Scott, Silver Marshall, AK 912. The loud speakers will not be needed.

8. Audio Amplifiers. Single, two step, and multiple tube auxiliary battery-powered amplifiers are included in this category.

9. Wave Traps and Auxiliary Tuners. Bring the instrument from your collection that best exemplifies the search for selectivity. It may be a homebrew, a standard or strange and unknown brand.

10. Loud Speakers. If enough entries are offered, this category will be divided into Horns and Cones.

11. Set Analyzers. Show some of the test equipment that was used to service receivers of the late twenties and early thirties.

Ye Old Swap Shop

AVAILABLE: Grebe Synchrophase Manual now being reproduced in high quality 71 pages — many photos — not a photo copy — by: Radio Age, $11.25 p.p. Gerald Tynes Saga of the Vacuum Tube — hard cover, $11.20 p.p. — soft cover, $8.20 p.p. Grebe instruction/wiring manual. 62 pages on CR-3-5-8-9-RORK-RORD-RORN. Grebe 12 page sales brochure with photos of above models. Both items, $5.50 p.p.

Radio Age, 636 Cambridge Road, Augusta, Georgia 30909

WANTED: DeForest spherical audio, dud or good. Pilot Wasp, early wireless & spark equipment. Early amateur gear.

Ralph Ernstein, 18934 Celtic Street, Northbridge, California 91326

FOR SALE: Available March 1, a ten page list of radio magazines, catalogs, books, & misc. literature. Send five 20 cent stamps for list.

Gary Schneider, 9951 Sunrise Boulevard, North Royalton, Ohio 44133

FOR SALE: *R.C. Dayton* (1924 rectangular 3 dial cabinet, exc, works), $80 with tubes, almost identical to VR, Pg. 135 (XL-5). $60 without tubes. *Amplex De EXER* (1925 — rectangular cabinet, exc, untested), $75 with tubes. Silk screened imitation wood-grain bakelite front panel, very little wear; style like VR, Pg. 124, #3. $60 w/o tubes. *RCA T6-1* (1935 Tombstone cabinet, exc, untested), tuning eye added, 6 knobs, $40. Send large SASE for up-to-date list.

Ron Boucher, 376 Cilley Road, Manchester, New Hampshire 03103

FOR SALE: RCA Radiola III Manual Repints $3 PP. Want good pair 8122 tubes.

J. Wasiewicz, 229 Sarles Lane, Pleasantville, New York 10570

FOR TRADE: Amrad 3500-3 Inductrole needing cabinet work, for good, original Kennedy 220 cabinet.

Craig Ball, 1412 W. Linn, Marshalltown, Iowa 50158

FOR SALE: Old tubes. Type 813, 4x500A 816S/4, 805, C8-387, 327A, 287A, 810, 2 AP1, 845, C101. Philco radio Model 20, & RCA 6T; Philco Model 38-4, & Spartan Model 589. Send SASE for price list.

Bruce Damschroder, 6700 Madison Avenue, Des Moines, Iowa 50322

FOR SALE: W.E. 618A mike, Shure SB mike with ring & floor stand; Colonial grandfather clock radio. SASE for list.

WANTED: DeForest Duo-Latera I coils, catalogs & DeForest audio V.T. tubes.

George Potter, 238 Village Drive, Lewisville, Texas 75067

FOR SALE: Battery & electric radios, including tall clock radio, several battery Radiolas, communications receivers; 28 volumes of Experimental and Wireless Engineer, 1924-56; Riders Manuals. Send SASE for complete list.

Daniel S. Voydanoff, 1141 Yorkshire, Grosse Point, Michigan 48230

SASE for 1983 list of restoration materials including antennas, crystal set parts, early receivers, schematics, cotton covered wire, bus bar, etc.

C. A. Days, P.O. Box 205G, South Darmouth, Massachusetts 02748

FOR SALE: Replacement dials for Philco radios. Four types available for Models 33B, 84B, 93B, and 37-84. P.N. 27-5100 and 27-5031 are $6.50 @ P.P. P.N. 27-5168 and 27-5210 are $7.50 @ P.P.

Peter F. Yanczer, 835 Bricken Place, Warson Woods, Missouri 63122

WANTED: Cabinet for Federal Type 200. Panel 14½", 17½" wide. Also audio TFA for same.

Everett Ludley, 301 Edgewood Drive, Webster City, Iowa 50595

WANTED: Unusual microphones to add to my museum collection. Have some items for trade in radio as well as duplicate mikes.

Bob Paquette, 107 E. National Avenue, Milwaukee, Wisconsin 53204

WANTED: Would like to correspond with collectors familiar with Majestic Cathedral, Model 196. Need schematic. Also interested in restorable cathedrals.

CWO Howard W. Sparks, 3rd BN, 7th ADA, Direct Support Battery, APO, N.Y. 09702

WANTED: Set of metal tuning dial plates for an IP 501 (SE-1420), see V.R., Pg. 64. Also a cabinet for a Grebe CR-18.

D. Shanks, 115 Baldwin Street, Bloomfield, New Jersey 07003

WANTED: Western Electric, any items. RCA Victrola Credenza 8-30. Edison Opera.

David Yo, P.O. Box 832, Monterey Park, California 91754

WANTED: REL-278 receiver. Would appreciate hearing from anyone with information on this receiver. Will share info on early regen theory.

John W. Crowe, 22060 Independence Street, Woodland Hills, California 91364

WANTED: Information on P.A. Starck Piano Co., Starck Classique receiver, c. 1929. Also info on early communications/military sets for inclusion in a reference of same. Need pix, descriptions, old ads, prices, etc. WWI to 1960.

Bill Taylor, Box 132, Unionville, Pennsylvania 19375

WANTED: Early radio magazines, Crosley Bandbox, Clapp-Eastham RZ parts, Zenith 3R knobs; Schematics for Zenith 3R, RCA 621TS TV, Hallicrafters 5990 TV. Instructions for Supreme 45 Tube Tester.

R. Groshong, 6604 Kent Drive, N.E., Cedar Rapids, Iowa 52402

WANTED: *Early* crystal detectors, including Wireless Specialty Co. products, Radiola I detector assembly, DeForest Detector stand, and Freshman Detector stand. Have AK breadboards (including Model 3945 and Model 9) & breadboard parts to trade.

Jerald Hueber, 6316 Winnebago Court, Fort Wayne, Indiana 46815

WANTED: Good X99's and V99's. Also a working Radiola 26 in excellent condition.

Andrew Mooradian, 5 Priscilla Lane, Winchester, Massachusetts 01890

WANTED: Variocoupler suitable for input of antique radio circuit primary connected to antenna & ground. Secondary tunes BC band with 500 pf tuning condenser.

Rodney Schrock, 402 Lincoln Street, Somerset, Pennsylvania 15501

FOR SALE: 1924 Cockaday 4 circuit tuner w/5 good tubes, resistance coupled ampli., restored and plays, $100. Radiola III, clean w/2 WDII, and plays, $100. AK20, clean (AFT open), no tubes, $50; Fada, 5 tubes, clean and plays, $100. Freshman Masterpiece, clean, w/5 tubes, plays, $75. UPS, extra.

John Wasiewicz, 229 Sarles Lane, Pleasantville, New York 10570

FOR SALE: Radios, magazines, tubes, parts, and advertising. Send want lists.

Waves, 32 East 13th Street, New York, New York 10003

FOR SALE: Low cost battery eliminator for antique radios. Can be used internally or externally on set. Instruction sheets for Aeriola Sr. lids. Beautiful reproduction. $3 each plus 75¢ handling per order.

Peter F. Yanczer, 835 Bricken Place, Warson Woods, Missouri 63122

WANTED: Zenith Stratospher radio, early TV parts, sets and literature.
FOR SALE OR TRADE: Freed-Eisemann NR6. Good condition. Kellogg Wavemaster, good condition w/extra Kellogg tubes, battery eliminators, etc.

David B. Johnson, 6236 S. Richmond, Chicago, Illinois 60629

WANTED: Our club secretary, Mr. William Denk suggests a list be compiled of regular suppliers of parts and components — including tube sources for the benefit of all source suppliers and collectors. Please register before this winter issue of Gazette. A source of those who will consider restorations on a fee basis — working over old equipment — are requested to register for the list's inclusion. ARCA assumes no liabilities in this regard — simply a list of those who may be contacted. Register listings with:

M. R. Comer, 205 Roberts Road, Ardmore, Pennsylvania 19003

WANTED: Items of interest in various categories for ribbon awards at the contest displays this March, Annual ARCA Conference, Charleston, West Virginia, May 11th thru May 14th, 1983. Bring those sets for display and win an official ribbon!!

WANTED: Volunteers for show & tell program to discuss items of historical interest & restorations. Applicants will be recognized for short talks as time permits for these programs. Also — for AWA-Canandaguia this fall!! Please contact:

Mel Comer, 205 Roberts Road, Ardmore, Pennsylvania 19003

FOR SALE: East Coast trip built up stock of items. SASE for current list of many items available. Soon as I can book space on outer space "Columbia," should have some exotic items to add to list? Meantime, I am very much on "stand-by."

William Laverty, 1012 W. Geneva Street, Egg Harbor, New Jersey 08215

FOR SALE: Do you need Litz wire various sizes? For loops and coils — stock is now going fast! State your needs while supply still available.

Charles Barone, 5628 N. Prospect Avenue, Norwood Park Twnp, Illinois 60631

FOR SALE: Those hard to find parts. Dials — panels — hardware — plastics my specialty to exact colors. Atwater Kent — DeForest — Crosley and others usually in stock. Some items require samples for mold duplication. State your needs. Send SASE for catalog sheet of items.

Keith Parry, 17557 Horace, Granada Hills, California 91344

FOR SALE: A few rare catalogues of early manufacturers still available at reasonable prices. Send SASE for current listing.

Guy Martin, P.O. Box A, Azusa, California 91702

WANTED: Items of John Firth — Vocatone — Vocarola — Vocaphone — parts for same. Also Leutz items and sets.

Larry Wright, 131 Hilltop Drive, Lake in the Hills, Illinois 60102

FOR SALE: My stock of tubes just being replenished with the arrival of another large shipment on way in here. State your needs and will back order if necessary and furnish as rare tubes become available. Reasonable prices with turnover is my motto! Enclose SASE for reply to your wants.

Rick Weibezahl, 305 Belvidere Avenue, Washington, New Jersey 07882

WANTED: Still looking for Grebe Rork parts to complete a project. Cabinet — panel & rheostats on hand. Also interested buying a complete Rork any condition.

Bill Hurni, 329 Evergreen Drive, North Wales, Pennsylvania 19454

FOR SALE: Atwater Kent breadboard components — various items including some blank boards for mounting. Will trade for Zenith R3 or R4 or Gold 01-AS. Send SASE.

William Pugh, 2125 E. Myrtle Avenue, Phoenix, Arizona 85020

WANTED: Jackson-Bell Peter Pan Radios and Emerson Mickey Mouse Radio. I would also like an Arvin Hopalong Cassidy Radio and a Majestic Charlie McCarthy Radio.

Borut Mlakar, 1401 36th Avenue N.E., Minneapolis, Minnesota 55418

WANTED: Broadcast microphone archive seeks mikes and related items of pre-40's vintage. Some trades available.

James Steele, NAB, Box 39190, Washington, D.C. 20016

(continued from page 15)

Operators Association in 1940, he said: "My earliest broadcasting began here on the Pacific Coast... Pioneering station KQW at San Jose maintained regular transmissions ...That station, KQW, can rightfully claim to be the oldest broadcasting station in the entire world...."

In 1959, Professor Gordon B. Greb of San Jose State College wrote an extensively researched and documented article for the *Journal of Broadcasting* which unequivocally established the claim of KCBS as the nation's original station. In the article, Greb said: "KDKA, as well as WHA, Madison, WI, and WWJ, Detroit, MI, have all claimed to be the first stations. Each has a claim to a first of some kind or other, and KDKA's claim is that it was the first station to be licensed under the federal regulations in 1920. The regulations required the licensing of the stations by the federal government, and KDKA acquired the first federal license issued by the Dept. of Commerce. That is its claim to fame. But, as to which station actually was the first to go on the air and broadcast, it was Herrold's station in San Jose, CA (now KCBS, San Francisco), which was on the air so early there were no regulations to govern it."

Also, the then U.S. Senator Thomas Kuchel, on March 20, 1959, entered into The Congressional Record a treatise supporting KCBS' claim as the first in the nation.

In 1968, KCBS became the first all-news station in Northern California. In 1973, the station was honored with the Golden Mike Award of the Broadcast Pioneers.

In November of 1977, the Native Sons of the Golden West presented KCBS with a bronze plaque honoring it as a Historical Landmark in California history.

CHAPTER NEWS

The Antique Radio Club of Illinois
An Affiliate of
The Antique Radio Club of America
In Cooperation With
The Indiana Historical Radio Society
and
The Mid-America Antique Radio Club
Presents
Radiofest '83
August 13, 1983 at the Holiday Inn,

345 River Rd., Elgin, IL (Route 31 South, exit from the I-90 Northwest Tollway Turn left at first stop light)

THE PROGRAM

I. All Day Swap-Sell Session
II. Several Tech Sessions Including "How Much Is That Old Radio Worth?"
III. Radio Contest — Categories
Class I — Regenerative Receivers
Class II — TRF Receivers
Class III — Crystal Sets — 1920 To Present
Class IV — Cathedral Sets
Class V — Pre-1920 Receivers
Class VI — Consoles
Class VII — Zenith Receivers — 1922 To Present
Class VIII — Advertising
Contest Entries Must Be In The Contest Room By 11:00 A.M.
IV. Saturday Night: Banquet And Awards Presentation Plus An Interesting Program

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Registration:
Pre-Registration $2.00 — Registration on the day of meet — $3.00
Banquet Tickets: $10.50
Motel Rooms:
Holiday Inn is offering us a 10% on rooms — contact them at the above address or call 312-695-5000 and request reservations for Radiofest '83.

Early Birds — Enjoy a reception Friday evening hosted by ARCI. Stay over Sunday and attend the Santa Fe Hamfest (one of the largest in the country). Directions at the meet.

Yes, I plan to attend the meet
Yes**No** I plan to attend the banquet
Make banquet and pre-registration checks to: ARCI and send to:
Joe Willis — 525 Oakdale *#524 — Chicago, IL 60657*
If possible, please reply by April 30th.

News From The Charleston, W.Va.

Chapter News

We completed 1982 on an upbeat note with membership doubling and our treasury increasing ten fold.

The year was capped off with a Christmas Banquet held in the Columbia Room of the Ramada Inn, South Charleston, West Virginia. Member Paul Wilson and Louise entertained the group with a test of antique recognition by displaying several items which were in common use in the nostalgic past. We older folk did much better at identifying than the younger members. A tool used to scrape hogs at butchering time was readily recognized by me and why and how it was used on those cold late fall days of my youth. Sad to say, most young folks today are denied the "pleasures" of raising and butchering hogs every fall in order to have meat on the table during the winter.

As mentioned in an earlier report to the Gazette we are being provided a permanent meeting location by member Dave Manning in part of the building housing Computerland. Work is being done on the room to provide for a place to store our collection of radios, books, and other miscellaneous items we are accumulating for our antique radio museum.

Assignments have been made to club members for the part each will play in the May ARCA meeting and we are planning for this event to be a very pleasant and rewarding experience for all attendees. We have noted that May 13 happens to be on Friday; however, the superstitions about Friday the thirteenth are not observed in Charleston, West Virginia, and should pose no problems to paid up ARCA Members.

J.A. Moore,
Editor/Reporter

HOW TO REPAIR A RCA CATACOMB

by
Rodney Schrock

Finding out what is inside a catacomb is a frustrating process. One way is combining the continuity diagram and the external battery and connection diagram found in old RCA service literature and also in Rider's Vol. 1. Leutz's diagram of RCA AR812 found in the 1925 "Modern Radio Reception," I find rather confusing. The best diagrams I can locate are in the 1930 Gernsback "Official Radio Service Manual," a likeness of which I have sketched.

What does it do?

Inside we have a rather complete superhet — tubes V1 thru V6, all triode UV199. V1 is an untuned rf amplifier reflexed as a first IF ampl. — the IF being of the vicinity of 40 to 50 khz. (I never measured it.) V2 is a combined oscillator-mixer tuned by C2. The left hand tuning condenser (500pf.). C1, of course, tunes the loop. V3 is the 2nd IF, VA the det., 5 & 6 are audio amps. The radio uses the 2nd harmonic of V2 to produce the IF beat freq. Due to this arrangement, this radio is loaded with spurious responses. Leutz states that the fundamentals of V2 beat with lo freq commercial cw stations, the 2nd harmonic produces the proper responses and I've had the 3rd harmonic beat with locals — so a person could receive local stations at least four places on the dials. Leutz claims the reception from these sets in the New York area was ridiculous.

What are the location of the parts?

See Fig. 2. Everything is mounted on two central laminated cores. One core is for the hi-freq, the other is for T1 & T2. If the audios are open, replace them with Thordarson 20A18's by removing their mounting hardware. Then slide them into the old

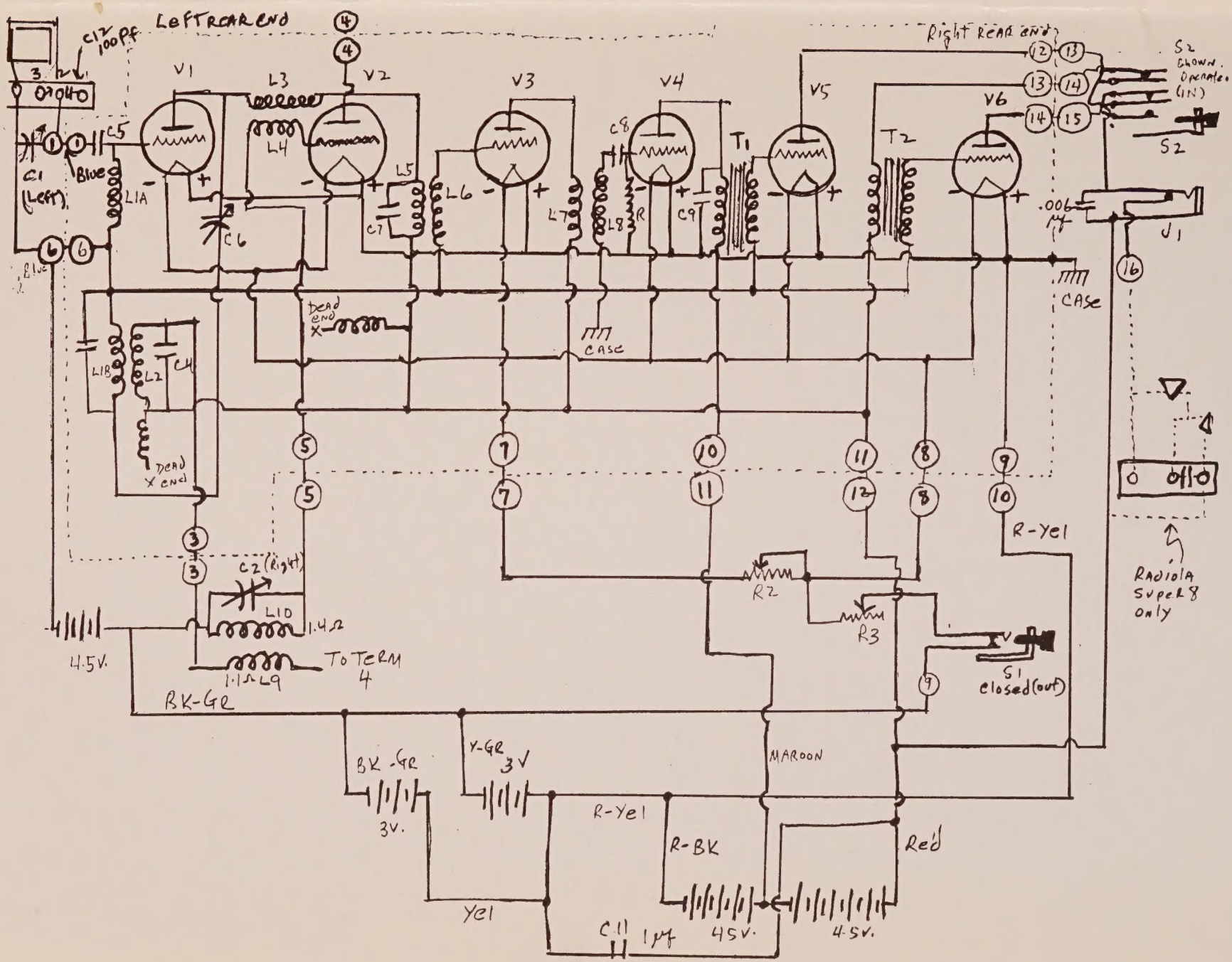
channel iron, epoxy them into place. Solder a ground wire from the cores of the new audios to the hi freq core and connect an 8" piece of insulated wire to the central core and bare the end. When you re-insert the "innards" into the can, solder this end to the can, thus insuring a good ground return. Skin, repair and reconnect the coil pigtails if any be broken, be careful, wires appear to go where they don't. I have found two different values of L7, the lower value seems to be accompanied by a condenser which I have marked on Fig. 2 with a ? where it is connected, I'm not sure as mine was partially disconnected but the catacomb seems to work very well without it. Perhaps it tunes L7. Check the grid-leak "R." It usually checks approx. 5 meg. I think this value is a bit high, so I replace all R's with a 2.2 meg resistor, thus avoiding the low gain and noise so characteristic of aged grid leaks. I also replace C9 as it has 45v. to grd. & leave enough space for the catacomb top to fit properly. I have listed resistance, capacity, & inductance values the C&L values I meas. with a GR450 bridge — see Fig. 6. If you have a bad inductor, maybe you can find one on another catacomb, oper up the laminations and replace it. To check the inductors, you could use a flyback tester or ring them with a pulse from your scope. See also Feb 1966 Radio* Electronics. The tests described on pgs. 40, 41 & 42 are very helpful. Check carefully all circuit paths. Clean and bend the contacts on all tube sockets. I didn't pay too much attention to F + lug path of V5 or 6, blaming an intermittent reading on dirt. Turned out I had to remove the top plate from the "cat" & resolder the connection at the tube socket — the thru path was ok, but the drop path to the socket was intermittent, thus only seldom did the associated tube light. With a nail file, burnishing tool or something rough, go over the contacts on the springs of S2, S2 often gives me fits, C11 is best replaced with a good 1 or 2 uf. cap. Fig. 3 gives connections between catacomb whiskers and the rear term strip. Make sure you have good batteries and tubes. Drop their Ef 10% and see how much their Gm drops. Pick your best 199 for V2 — it is very critical, a tube with poor filament activity gives poor performance. A tube will work well in V2 stage in one set but not another. This may in part be due to the condition of the oscillator coil. Take the coil apart, clean and resolder the connections, heat the coil in an oven at 100° for awhile. If you have bakelite, drill and cut a new spacer — see Fig. 4. Reassemble catacomb, your choice of parafin or no filler at all. Fig. 7 gives conn. to term strip for batteries in the absence of a battery cable. I have a test stand made out an old Radiola AR812 and using Remler tuning condensers to which I hook up external batteries with clip cords and use a WE 1A loop.

How do you test the circuits?

RCA and Gernsback both tell us to connect a 4.5v batt & headphones in series or use a lo range voltmeter instead of the phones and check specified paths which they list. I may use a reliable ohm meter and follow the table in Fig. 5. You will no doubt find one or both windings of T1 or T2 open. I've only once found one "cat" with both T1 & T2 OK. Some of the inductors or winding of the IF xfmrs may be open. This is more than likely due to one or more of their hair-like pigtails breaking.

How do we remove the insides?

Cut the lead seals, place "cat" on aluminum foil on an old baking pan, bake in oven @ 250°-300° for best part of an hour or until slight blue smoke comes out of the top of the cat. Be careful — we don't want to start a fire or bend the plastic tube sockets. My friend "Ted" used to set them in a coal stove — perhaps when the fire had died down. When the catacomb is "ripe," pull up on the top of the cat with hot pads or bar-b-q gloves. The top should come out of the can. Drain the top into a tin can, lift the catacomb bottom with aluminum foil out of the oven, drain the melted wax-varnish mixture into a juice can sitting on some wood so as not to burn the table top.


LEFT REAR END
RIGHT REAR END
C12 100pf
V1
V2
V3
V4
V5
V6
L3
L4
L5
L6
L7
L8
C8
C9
T1
T2
C5
C1 (Left)
Blue
L1A
C6
C7
R
.006 µf
J1
S2
CASE
DEAD END
L1B
L2
C4
C2 (Right)
L1D
1.4Ω
1.1Ω L9
TO TERM 4
4.5V.
R2
R3
R-Yel
S1 closed (out)
RADIOLA SUPER 8 only
BK-GR
Y-GR
3V.
MAROON
R-BK
Red
Yel
C11 1µf
45V.

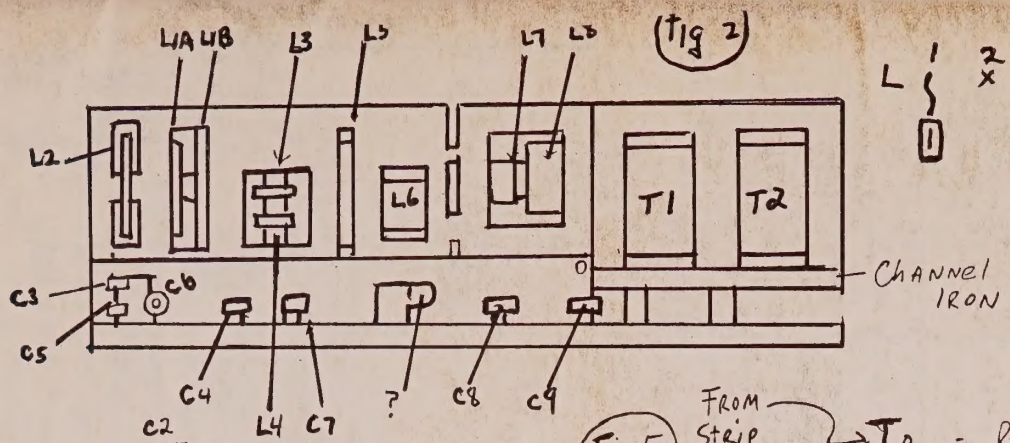


Fig 2

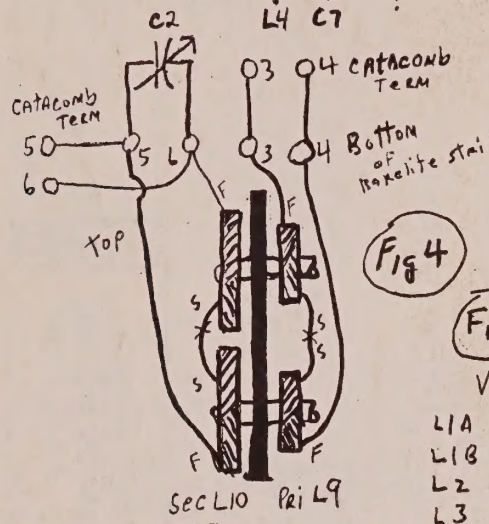
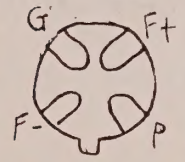


Fig 4



Socket View (Top)

Fig 8

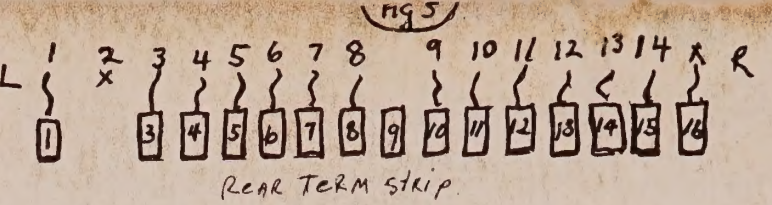
Fig 6

Values

L1A	55Ω	53mh
L1B	55Ω	50mh
L2	32Ω	14mh
L3	10Ω	2mh
L4	12Ω	3.4mh
L5	30Ω	14mh
L6	150Ω	520mh
L7	70Ω	100mh (54Ω?)
L8	200Ω	700mh
C1	500pf	C8 200pf
C2	"	C9 .0015μf
C3	200pf	
C4	.001μf	
C5	.00021μf	
C6	very small	
C7	.0012	

Fig 5

From Strip Term	To	= Reading
1	V1G	∝
4	V2P	0
5	V2G	12Ω
6	V1P	∝
6	V1G	55Ω
6	V3G	160Ω
6	V5G	6.5K
6	V6G	6.5K
7	V3F-	0
8	V1,2,4,5,6F-	0
10	V4P	∝
10	CATACOMB CAN	0
10	All F-	∝
10	V4G	∝
11	V4P	1K
12	TERM 3	32Ω
12	V1P	45Ω
12	V3P	70Ω OR 54Ω
12	TERM 14	1K
13	V5P	0
15	V6P	0
11	3	30Ω
3	V1P	70Ω



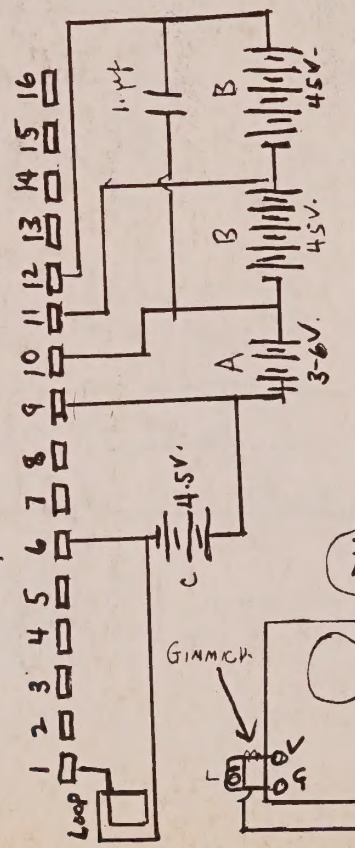


Fig 7

Fig 9